

Abstract of the Disclosure

A fuel injector for use with an internal combustion engine. The fuel injector can include a tube assembly, an armature assembly, a working air gap, a coil, and a housing. The tube assembly has a longitudinal axis and includes a non-magnetic tube having a first end and a second end, and a pole piece disposed inside the non-magnetic tube intermediate the first and second ends. The armature assembly is disposed within the tube assembly between the pole piece and the first end. The armature assembly includes an end face resiliently biased away from the pole piece. The working air gap separates the end face and the pole piece when the end face is biased away from the pole piece. The coil is connectable to an electrical power source and operable to displace the end face toward the pole piece against the resilient bias on the armature assembly. The housing is positioned adjacent the working air gap and supports the coil on the tube assembly. The housing extends around the coil and has a ferromagnetic inner wall extending between the coil and the non-magnetic tube. The ferromagnetic inner wall has an opening with a width that is substantially less than the length of the coil as measured parallel to the longitudinal axis